APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/463,527	01/25/2000	GERNOT VON DER STRATEN	P99.1864	6446

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EXAMINER
SEFCHECK, GREGORY B

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

- Applicant's Request for Continued Examination filed 2/6/2004 is acknowledged.

- Claims 17-32, as presented in the Amendment filed 12/10/2003, are pending.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 17-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Acharya et al. (US005903559A), hereafter Acharya, in view of Burwell et al.

(US005818842A), hereafter Burwell.

- In regards to Claims 17, 21, 22, and 28,

Acharya discloses a method and switching unit for internet protocol over ATM

cell transport (Title; claim 17,28 – method and switching unit for operating a

communication network).

Referring to Figs. 3-5a, Acharya discloses transporting IP packets, which are

known to specify a destination address and vary in length, in ATM cells of a fixed length

comprising a header containing identifiers of virtual paths and virtual circuits, for

transmission over the network (Col. 2, lines 13-48; claim 17,28 – employing first

protocol data frames containing a destination address; claim 17,28 – generating second

protocol data packets comprising a portion of the data frame that contains a connection

identifier; claim 17,28 – transmitting data packets over communication network; claim 22

– first protocol is IP and second protocol is ATM).

Referring to Fig. 5, Acharya discloses IP packets transmitted along a VC-mapped

link 505 from source node 500. Upon receipt at node 520, the destination address of

the IP data is processed by the coupled router 525 (Col. 7, lines 16-35; claim 17,28 –

reading destination address of the data frame upon receipt of the transmitted data

packet).

Acharya discloses that VC mapping is done on a link-by-link basis at each

receiving node (Col. 6-7, lines 65-4). A new VC is picked for link 524 by the node 520

(Col. 7, lines 40-41; claim 17,28 – determining a new connection identifier based on

destination address).

Acharya discloses that cells of IP packets that have been queued while IP

processing is performed are flushed to the port allocated to the new VC on link 524

while all the other IP cells on the VC incoming to node 520 are allowed to bypass the

router and be directly cell switched on the new VC (Col. 7, lines 45-50; claim 17,28 –

generating, prior to receipt of all data packets of the data frame, new data packets

containing new connection identifier from received data packets; claim 21 – generating

new data packets occurs contemporaneously with receipt of data packets).

Acharya describes implementation of AAL layers in the protocol stack of the ATM switch, but does not expressly disclose checking the message data of the data frame for errors according to a predetermined error checking technique by comparing reference data having a rated value and contained in the data frame to the message data.

Burwell discloses an IP over ATM network which performs ATM segmentation and resassembly and AAL5 processing at network switches (Ridges; Col. 8, lines 52-67; Col. 3-4, lines 29-63). Burwell discloses the use of comparing a checksum field in received data to the message data to check for errors during transmission (Col. 14, lines 6 and 50-53; claim 17,28 – checking message data of data frame for errors according to a predetermined error checking technique, comprising comparing reference data having a rated value and contained in data frame to message data; claim 17,28 – transmitting new data packets of data frame that are error-free).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and switching unit of Acharya by utilizing a CRC or checksum technique for identify errors in the transmitted data, as shown by Burwell. Such a modification would enable subsequent transmission of error-free data, thereby increasing throughput of usable data and overall system efficiency.

-    In regards to Claims 18-20,

Acharya discloses a method and switching unit for internet protocol over ATM cell transport that covers all limitations of the parent claims.

Achary does not explicitly disclose modifying message data of the data frame to contain a counter value dependent on prior transmissions of the data frame and generating new reference data for the data frame according to error checking technique.

Burwell discloses modifying the network header of the packet by decrementing the TTL and adjusting the checksum field (Col. 10, lines 59-62; claim 18 – modifying message data of data frame; claim 18 – generating new reference data for data frame according to packet error checking technique; claim 19 – message data is modified to contain a counter value dependent on prior transmissions of data frame; claim 20 – checking of message data for transmission errors and generating new reference data occur contemporaneously with generating new data packets of data frame).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the message data in the method and switching unit of Acharya by decrementing the TTL (hop-count) of the packet according to IP protocol and generating a new checksum so that the error checking method can be reiterated for successive received data packets. This modification allows the ATM switch to perform various IP processing functions that enable IP-over-ATM transmission. New checksum generation is thus enabled to fluidly identify errors in received packets and update the checksum for subsequent data packets while transmission of the error-free data packets to the next hop in the network proceeds.

-   In regards to Claims 23, 26, 27, 29, 31, and 32,

Acharya discloses a method and switching unit for internet protocol over ATM cell transport that covers all limitations of the parent claims.

Acharya discloses the use of a VP/VC routing table (associative memory; claim 27,32 – one of revaluation memories is an associative memory) for routing data packets to the router 525 for initial IP processing (first revaluation memory) as well as forwarding of subsequent packets on a VC to the next hop in the network (second revaluation memory; Col. 7, lines 25-50; claim 23 – storing an entry for assisting in recognizing said data packet containing destination address in a first revaluation memory, which stores the connection identifier of the data packet; claim 26,31 – storing new connection identifier for data packet containing destination address in second revaluation memory, which is used for allocating new connection identifier to destination address; claim 29 – first revaluation memory for allocating new connection identifier to at least one connection identifier of a received data packet).

-   In regards to Claims 24 and 25,

Acharya discloses a method and switching unit for internet protocol over ATM cell transport that covers all limitations of the parent claims.

Achary shows that once IP processing has been performed on the initial data packet of an IP data flow, the routing table is updated to reflect the new VP/VC for

properly forwarding of subsequent packets of the flow, without the need for processing

by the IP router, until a packet of a new flow is received (Col. 7, lines 37-50; claim 24 –

overwriting the entry in first revaluation memory with new connection identifier after

receiving data packet of data frame; claim 24 – overwriting new connection identifier

with entry after receiving last data packet of data frame; claim 25 – new connection

identifiers for data packets received after data packet containing destination address are

identified with assistance of new connection identifier stored in first revaluation

memory).

- In regards to Claim 30,

Acharya discloses a method and switching unit for internet protocol over ATM

cell transport that covers all limitations of the parent claims.

Acharya shows that all unknown VCs of received data packets at node 524 are

routed to a port with access to the IP router, which performs IP processing to establish a

proper VC/VP for subsequent data packets of that particular flow (Col. 7, lines 25-28

and 44-50; claim 30 – first revaluation memory comprises a predetermined entry

identifying connection identifiers of received data packets for which new connection

identifiers must still be generated)

Response to Arguments

3.   Applicant's arguments with respect to claims 17-32 filed 12/10/2003 have been

considered but are moot in view of the new ground(s) of rejection.

4.   Applicant's arguments filed 6/20/2003 have been fully considered but they are

not persuasive.

NOTE: The Examiner has reviewed the record and believes that a rejection

based primarily on the prior art cited in the First Office Action mailed 3/17/2003 best

discloses the features of the present application. To advance the prosecution, the

Examiner is responding below to the Applicant's Arguments subsequent to that action,

filed 6/20/2003:

-    In the Remarks on page 7 of the Reply filed 6/20/2003, the Applicant

    contends that Acharya does not disclose or suggest generating new data

    packets from data packet received from the data frame prior to receipt of

    all of the data packets from the data frame.

-    The Examiner respectfully disagrees. Referring to Fig. 5 and column 7,

    lines 5-50, Acharya discloses that an initial data packet of an IP data

    frame, once received at ATM switch 524, is routed to IP router 525 to be

    processed for a next hop. As the Applicant also contends, Acharya

    discloses that data packets received during IP processing are stored.

    However, upon successfully determining the next VC for the flow of data

packets of IP data, the enqueued data packets are flushed and

subsequent packets are forwarded while bypassing the router. Acharya's

disclosure of "subsequent packets" is interpreted by the Examiner to show

that all packets for a particular VC are not received prior to successful IP

processing and forwarding of received packets.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

- Yin et al. (US006490251B2) discloses a method and apparatus for

   communicating congestion information among different protocol layers between

   networks

- Kshirsagar et al. (US006483853B1) discloses a communications system for

   transmission of datagram packets over connection-oriented networks

- Isoyama et al. (US006418145B1) discloses an internet protocol layer processor

- Han (US006351465B1) discloses a system for routing packet switched traffic

- Lea (US006115373A) discloses an information network architecture

- Civanlar et al. (US005996021A) discloses an internet protocol relay network for

   directly routing datagram from ingress router to egress router

- Alexander, Jr. et al. (US005909441A) discloses an apparatus and method for reducing frame loss in route switched networks

- Bernet et al. (US005764645A) discloses an IP/ATM network adaptation

- Callon (US005699347A) discloses a method and apparatus for routing packets in networks having connection-oriented subnetworks

- Callon (US005583862A) discloses a method and apparatus for routing for virtual networks

- Opher et al. (US005408469A) discloses a routing device utilizing an ATM switch as a multi-channel backplane in a communication network

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GBS
11-08-2004

JOHN PEZZLO
PRIMARY EXAMINER